JUNIT - WRITING TESTS

Here we will see one complete example of JUnit testing using POJO class, Business logic class and a test class which will be run by test runner.

Create **EmployeeDetails.java** in **C:\ > JUNIT_WORKSPACE** which is a POJO class.

```
public class EmployeeDetails {

   private String name;
   private double monthlySalary;
   private int age;

   /**
   * @return the name
   */
   public String getName() {
      return name;
   }
   /**
   * @param name the name to set
   */
   public void setName(String name) {
      this.name = name;
   }
   /**
   * @return the monthlySalary
   */
   public double getMonthlySalary() {
      return monthlySalary;
   }
   /**
   * @param monthlySalary the monthlySalary to set
   */
   public void setMonthlySalary(double monthlySalary) {
      this.monthlySalary = monthlySalary;
   }
   /**
   * @return the age
   */
   public int getAge() {
      return age;
   }
   /**
   * @param age the age to set
   */
   public void setAge(int age) {
   this.age = age;
   }
}
```

EmployeeDetails class is used to

- get/set the value of employee's name.
- get/set the value of employee's monthly salary.
- get/set the value of employee's age.

Create a **EmpBusinessLogic.java** in **C:\ > JUNIT_WORKSPACE** which contains business logic

```
public class EmpBusinessLogic {
   // Calculate the yearly salary of employee
```

```
   public double calculateYearlySalary(EmployeeDetails employeeDetails){
      double yearlySalary=0;
      yearlySalary = employeeDetails.getMonthlySalary() * 12;
      return yearlySalary;
   }

   // Calculate the appraisal amount of employee
   public double calculateAppraisal(EmployeeDetails employeeDetails){
      double appraisal=0;
      if(employeeDetails.getMonthlySalary() < 10000){
         appraisal = 500;
      }else{
         appraisal = 1000;
      }
      return appraisal;
   }
}
```

EmpBusinessLogic class is used for calculating

- the yearly salary of employee.
- the appraisal amount of employee.

Create a **TestEmployeeDetails.java** in **C:\ > JUNIT_WORKSPACE** which contains test cases to be tested

```
import org.junit.Test;
import static org.junit.Assert.assertEquals;

public class TestEmployeeDetails {
   EmpBusinessLogic empBusinessLogic =new EmpBusinessLogic();
   EmployeeDetails employee = new EmployeeDetails();

   //test to check appraisal
   @Test
   public void testCalculateAppriasal() {
      employee.setName("Rajeev");
      employee.setAge(25);
      employee.setMonthlySalary(8000);
      double appraisal= empBusinessLogic.calculateAppraisal(employee);
      assertEquals(500, appraisal, 0.0);
   }

   // test to check yearly salary
   @Test
   public void testCalculateYearlySalary() {
      employee.setName("Rajeev");
      employee.setAge(25);
      employee.setMonthlySalary(8000);
      double salary= empBusinessLogic.calculateYearlySalary(employee);
      assertEquals(96000, salary, 0.0);
   }
}
```

TestEmployeeDetails class is used for testing the methods of **EmpBusinessLogic** class. It

- tests the yearly salary of the employee.
- tests the appraisal amount of the employee.

Next, let's create a java class file name **TestRunner.java** in **C:\ > JUNIT_WORKSPACE** to execute Test case(s)

```
import org.junit.runner.JUnitCore;
import org.junit.runner.Result;
import org.junit.runner.notification.Failure;

public class TestRunner {
```

```
   public static void main(String[] args) {
      Result result = JUnitCore.runClasses(TestEmployeeDetails.class);
      for (Failure failure : result.getFailures()) {
         System.out.println(failure.toString());
      }
      System.out.println(result.wasSuccessful());
   }
}
```

Compile the Test case and Test Runner classes using javac

```
C:\JUNIT_WORKSPACE>javac EmployeeDetails.java
EmpBusinessLogic.java TestEmployeeDetails.java TestRunner.java
```

Now run the Test Runner which will run test case defined in provided Test Case class.

```
C:\JUNIT_WORKSPACE>java TestRunner
```

Verify the output.

```
true
```